



*Date of Application, 8th Feb., 1892*

*Complete Specification Left, 4th Nov., 1892—Accepted, 17th Dec., 1892*

PROVISIONAL SPECIFICATION.

Improved Method of and Appliances for using Electricity as a Medicinal Agent.

I, WILLIAM GRIGG, of No. 33 Eastbourne Terrace, Hyde Park in the County of Middlesex Medical Electrician do hereby declare the nature of this invention to be as follows :—

My invention consists firstly, in various appliances for conveying an electric  
5 current for medicinal purposes to any part of a human or animal body, under various conditions, and, secondly, an electro magnetic generator and regulator, which may be used with the appliances before referred to, or these may be used in combination with any other form of generator or source of electricity.

In carrying my invention into effect, I may use plates, cups, discs or the like  
10 wholly or partly of conducting material, and suitably connected to my electro-magnetic machine, or any other source of current, so that said current may be applied and caused to flow between any two or more points or parts of a living body. I may use a conductive flooring as one pole, the other being applied as may be most desirable for medicinal or hygienic purposes. Or I may use a plain  
15 or medicated bath or baths as one or both poles, said bath or baths being suitably connected to and with the electro-magnetic or other generator. I may use bands or straps to permanently attach one or both poles to the body during treatment.

The second part of my said invention consists of a tube, preferably made of some insulating material, upon which insulated copper wire is wound in successive  
20 layers, each layer however being shorter than that preceding it. A magnetic core of laminated soft iron is arranged so as to be freely moved to and fro within the tube forming the base of the coil. The two ends of the coil are connected through a suitable magnetic contact-breaker with a battery or other source of electricity, the connections leading from the apparatus to the appliances for placing upon the  
25 body, forming a shunt to the battery circuit. Regulation is effected by the insertion or withdrawal of the magnetic core, which is graduated to allow of delicate manipulation. In order to further ensure regulation, I may cause the end of each layer upon the coil to project for attachment to the contact bars of a switch for cutting any required number of layers out of the circuit. Also, instead  
30 of using a shunt to the battery connections, as a means for coupling the various appliances used for making contact with a living body, with the apparatus, I may use one or more layers of wire wound over the conical coil before mentioned, and couple the two ends thereof directly to the appliances before mentioned, the afore-said conical coil and its regulator remaining intact, and the action thereof being  
35 the same. The outer layer or layers of wire in this case may be of less sectional area, and consequently of greater electrical resistance than that receiving the direct or primary current, and therefore the current applied to the body is an induced current of higher potential. This, however, is only applicable in certain cases, and where adapted to the apparatus is so arranged that it may be cut out  
40 and rendered inoperative, and the primary current used at will.

My invention is intended for the cure and prevention of diseases in human beings and animals, the restoration and increase of vitality, elimination of deleterious matter from the system, and the reduction of abnormal growths, gradually and painlessly.

45 Dated this 4th day of February 1892.

FREDK. WALKER,

11, Furnival Street, Holborn, London, E.C., Agent for the Applicant.

[Price 8d.]



## COMPLETE SPECIFICATION.

## Improved Method of and Appliances for using Electricity as a Medicinal Agent.

I, WILLIAM GRIGG of No. 33 Eastbourne Terrace, Hyde Park in the County of Middlesex Medical Electrician do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

My invention consists firstly in various appliances for conveying an electric current for medicinal purposes to any part of a human or animal body under various conditions, and secondly, an electro-magnetic generator and regulator which may be used with the appliances before referred to, or these may be used in combination with any other form of generator or source of electricity.

In order that my invention may be the better understood, I have appended the accompanying two sheets of drawings in which Figure 1, Sheet 1, represents one mode of applying the current to an animal, and Figure 2 upon the same sheet is a sectional elevation of a bath, arranged in conjunction with a generator. Figure 3, Sheet 2 is a front elevation of the generator according to my invention, and Figures 4 and 5 upon the same sheet are plan and end elevational views respectively of the same apparatus.

In carrying my invention into effect I may use plates, cups, discs, or the like, wholly or partly made of conducting material, and suitably connected to the electro-magnetic machine hereinafter described, or to any other suitable machine of like nature, so that said current may be caused to flow through the living body, between any two or more points or parts thereon.

In Figure 1, Sheet 1, a cow is shewn, having a spinal connection *b* preferably connected to the + pole of the generator at *c* the lower band or girth being insulated and carrying a connecting band *e* for connecting the — terminal of the generator independently to the free flexible wire and appliance *a*. This, as an illustrative instance, is a clip, for clipping the knee, leg, dewlap, or other part of the body to which it is necessary to apply the current for curative purposes. Said clip may be replaced by a cup, disc, belt, plate, sponge, acupuncture needle, or any other device for conveying the current as aforesaid under varying conditions of its application. A similar arrangement of parts, suitably adapted, may be used for curative purposes upon the human body, the sizes, the shape, and general conformation being modified therefor. Figure 2, Sheet 1, represents a bath *f*, preferably of metal or other conducting material, or otherwise if an immersed conducting plate or electrode be employed. The generator *g* is contained in a case or box in proximity to the bath *f* and its two terminals *h* and *i* are respectively connected to the bath *f* at *j* or to an immersed electrode, and to a sponge *k* with an insulating holder or handle. By this means a living body may be immersed in water, or medicated water, and an electric connection thus established with the major nerve centres, and any part afflicted may then be treated locally by sponging, the current of electricity flowing through the body from or to said nerve centres, and traversing the affected part aforesaid. I may, in lieu of a sponge *k*, use a disc, cup, belt, plate or any other device for localising the effect of said electric current.

I may also use a conducting flooring or plate, with or without medicated or other vapours, so that connection is established to and with a living body by the feet, or other part thereof, the circuit being completed by means of any of the devices for localisation hereinbefore enumerated.

The second part of my said invention consists of an electro magnetic generator, shewn in front elevation, plan and end views by Figures 3, 4 and 5, Sheet 2.

I employ a conical primary coil A, the step winding of which is shewn by the plan view Figure 4, partly sectional. This arrangement enables the regulation, (which is effected by the withdrawal or insertion of the magnetic laminated core B)



*Grigg's Improved Method of and Appliances for using Electricity as a Medicinal Agent.*

to be gradual, since the magnetic intensity decreases towards the smallest diameter. The coils are preferably wound and coupled in series, and together act as an interrupted primary electric circuit.

A magnet E is placed in series with the coil A, and an armature of soft iron or other magnetic material is mounted upon a spring, or piece of metal plate H, attached to a wound extension of the lower limb of the magnet E. In its normal position said spring H rests against the point of an adjustable screw I, passing through a standard D, which is connected to the main circuit, and thus causes the magnet E to be vitalized, drawing the armature towards it, and immediately breaking the circuit. This arrangement acts as a vibratory contact breaker, and is adjusted by means of the regulating screw I and check screw G so that the induction shocks, on making and breaking the circuit are not harmful to invalids or delicate bodies. Two terminals J and K, Figure 4 are provided for connecting the apparatus to the positive and negative poles of a battery or other source of electricity and one of these is coupled directly to one end of the wire forming the coil. The other end thereof passes to the coils of the magnet E which are oppositely coupled to H. The opposite pole of the battery also is connected to the standard D which is also coupled to C, F, being interposed in any part of the coil circuit, past the battery or the like.

The connections for applying the electric current to a living body are attached to the terminals F and C, as hereinbefore described. In effecting the regulation of said generator, I may, in addition to the movement of the central laminated core B, and regulating screws G and I, connect the several step windings of the coil separately, and arrange a suitable switch so that each or any of these may be separately operative, or all may be placed in series as before described, or in multiple. Or in other cases I may increase the sensitiveness of regulation by placing resistances in the circuit, or by increasing or diminishing the immersed surfaces of the electrodes in the battery.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is :—

First. The method of, and means for applying a current of electricity for medicinal purposes to the living body by external connections substantially as herein described with reference to Figure 1 of the appended drawings.

Second. The method of, and means for applying an electric current for medicinal purposes to the living body through the medium of a bath, substantially as herein described with reference to Figure 2 of the appended drawings.

Third. In using electricity for medicinal purposes the construction and employment of an electro-magnetic generator substantially as herein described with reference to Figures 3, 4 and 5 of the appended drawings.

Fourth. In using electricity for medicinal purposes, the method of and means for regulating the electro-magnetic generator referred to in the preceding claim substantially as herein described.

Dated this 1st day of November 1892.

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Fig I

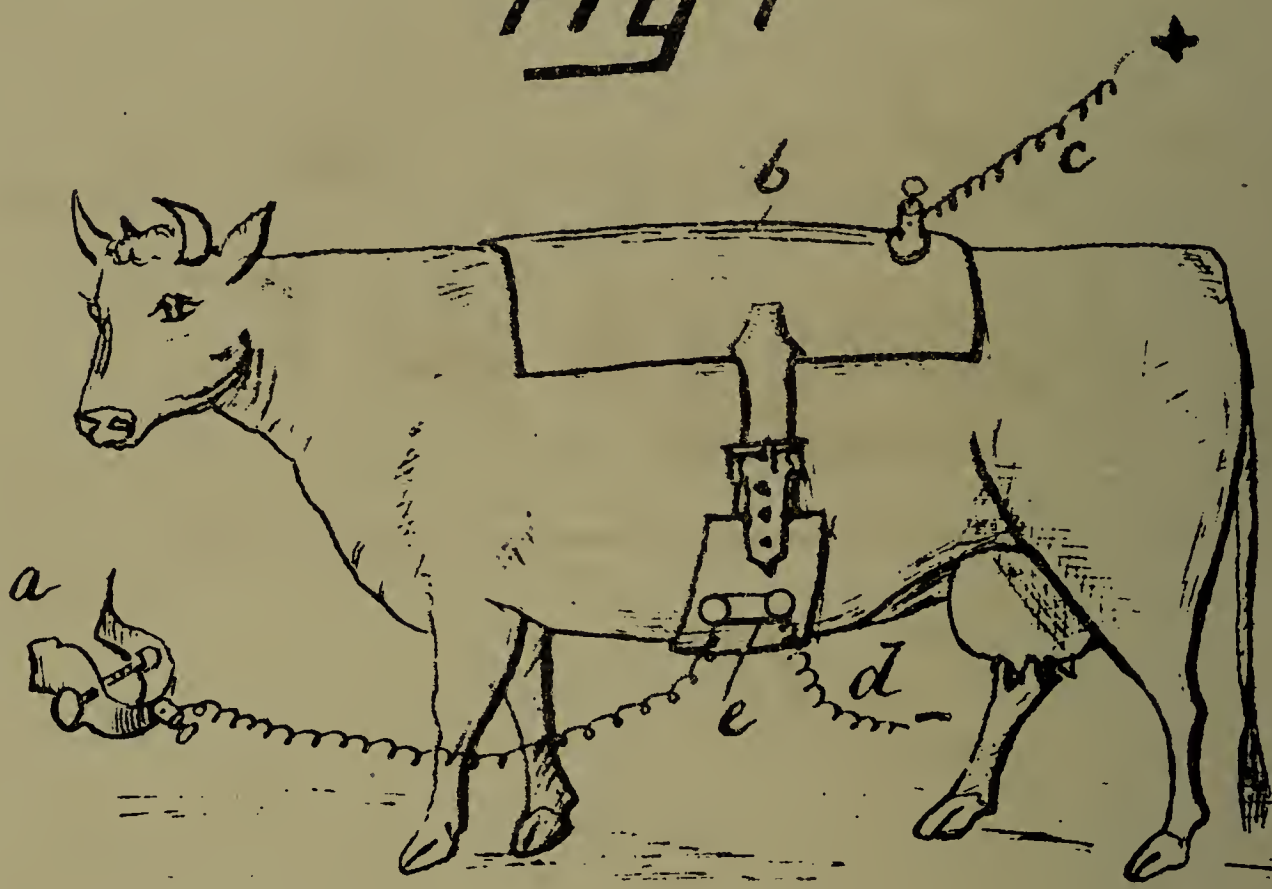


Fig II

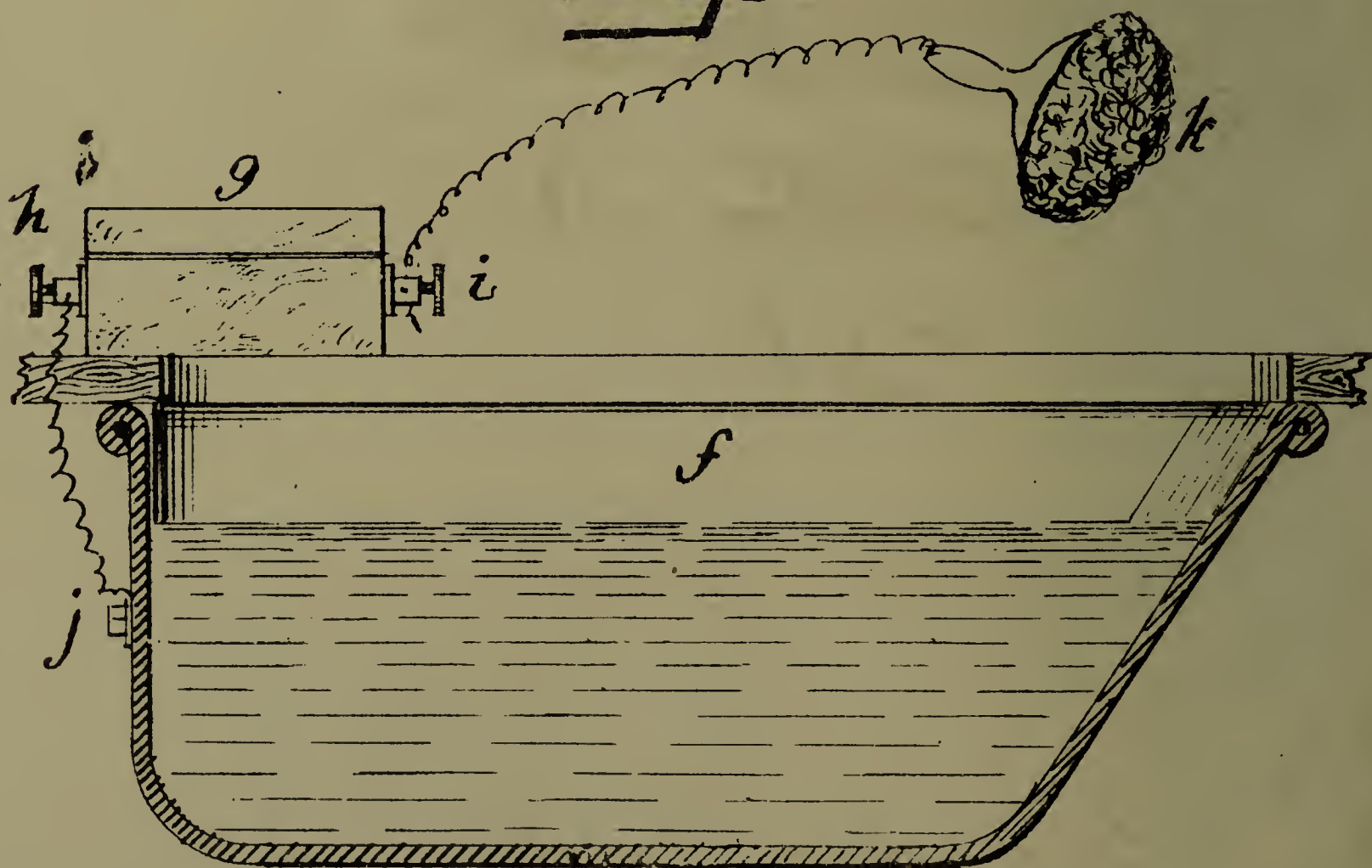


Fig III

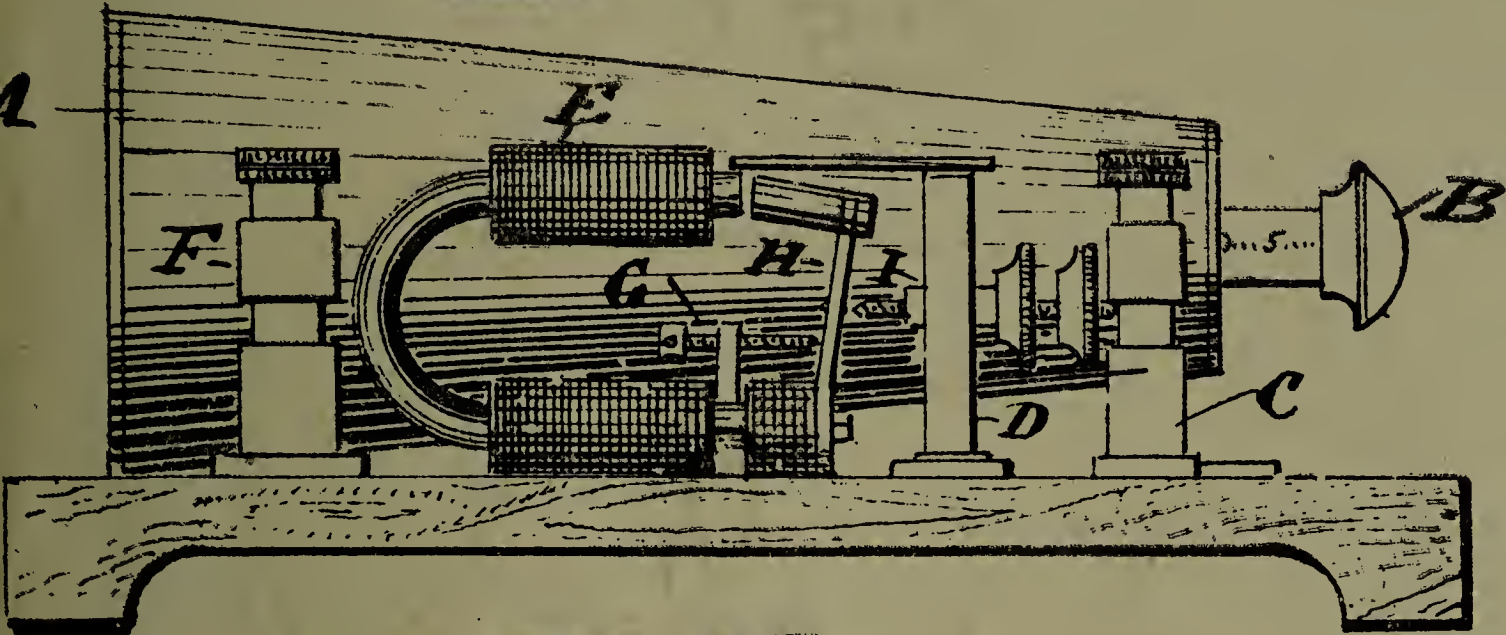


Fig IV

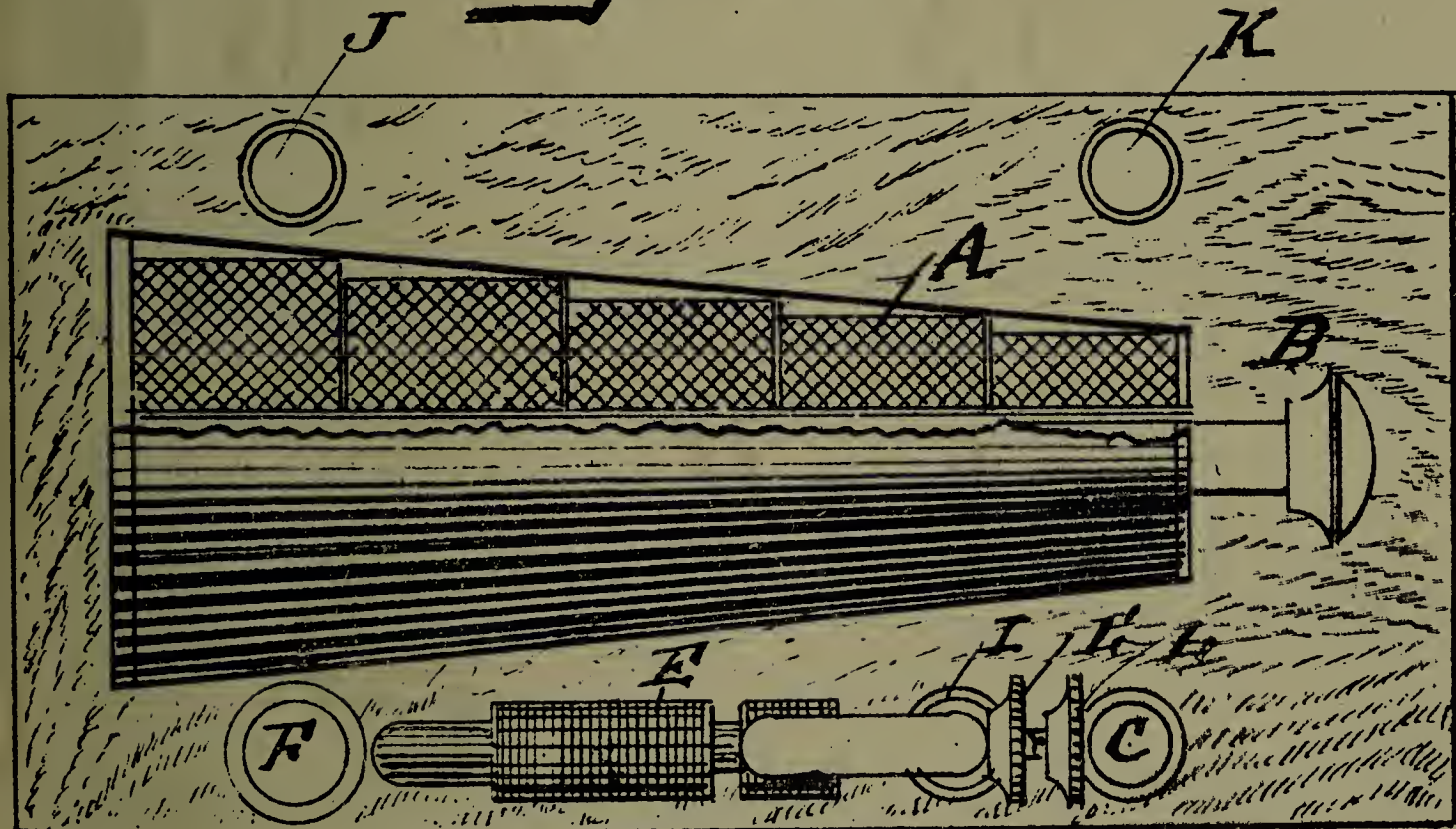
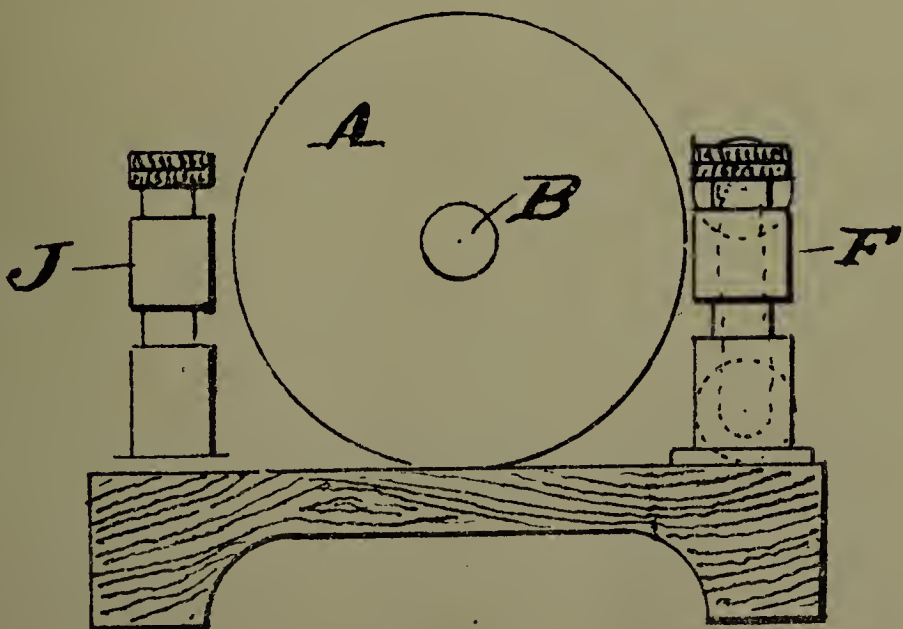


Fig V



[This Drawing is a reproduction of the Original on a reduced scale.]



